

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/549,977  
Source: PCT  
Date Processed by STIC: 10/03/2005

# ***ENTERED***



PCT

## RAW SEQUENCE LISTING

DATE: 10/03/2005

PATENT APPLICATION: US/10/549,977

TIME: 14:31:47

Input Set : A:\SEQ 32999A.txt

Output Set: N:\CRF4\10032005\J549977.raw

4 <110> APPLICANT: Iourgenko, Vadim  
 5 Labow, Mark A.  
 6 Song, Chuanzheng  
 7 Zhang, Wenjun  
 8 Zhu, Jian  
 10 <120> TITLE OF INVENTION: Cyclic AMP Response Element Activator  
 11 Proteins and Uses Related Thereto  
 14 <130> FILE REFERENCE: 4-32999P2  
 C--> 16 <140> CURRENT APPLICATION NUMBER: US/10/549,977  
 C--> 16 <141> CURRENT FILING DATE: 2005-09-20  
 16 <150> PRIOR APPLICATION NUMBER: 60/463,934  
 17 <151> PRIOR FILING DATE: 2003-04-18  
 19 <160> NUMBER OF SEQ ID NOS: 39  
 21 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
 23 <210> SEQ ID NO: 1  
 24 <211> LENGTH: 2878  
 25 <212> TYPE: DNA  
 26 <213> ORGANISM: human  
 28 <400> SEQUENCE: 1  
 29 cccattgac gcaaattgggc ggtaggcgtg tacgggtggga ggtctatata agcagagctc 60  
 30 gtttagtgaa ccgtcagatc gcctggagac gccatccacg ctgttttgac ctccatagaa 120  
 31 gacaccggga ccgatccagc ctccggactc tagcctaggc cgcgggacgg ataacaattt 180  
 32 cacacaggaa acagctatga ccattaggcc tatttaggtg acactataga acaagtttgt 240  
 33 acaaaaaagc aggctggtac cggtcgggaa ttcccgaggag gaggaggagg tggcgggcag 300  
 34 aagatggcga cttcgaacaa tccgcggaaa ttcagcgaga agatcgcgct gcacaatcag 360  
 35 aagcaggcgg aggagacggc ggccttcgag gaggtcatga aggacctgag cctgacgcgg 420  
 36 gccgcgcggc tccagctcca gaaatcccag tacctgcaac tgggccccag ccgaggccag 480  
 37 tactatggcg ggtccctgcc caacgtgaac cagatcggga gtggcaccat ggacctgccc 540  
 38 ttccagccca gcggatttct gggggaggcc ctggcagcgg ctctgtctc tctgaccccc 600  
 39 ttccaatcct cgggcctgga caccagccgg accaccggc accatgggct ggtggacagg 660  
 40 gtgtaccggg agcgtggccg gctcggtcc ccacaccgcc ggcccctgtc agtggacaaa 720  
 41 caaggacggc aggcgacag ctgcccctat ggcacctgt acctctcacc acccgcgagc 780  
 42 accagctgga gaaggaccaa ttctgactcc gccctgcacc agagcacaat gacgcccacg 840  
 43 cagccagaat ccttttagcag tgggtcccag gacgtgcacc agaaaagagt cttactgtta 900  
 44 acagtcccag gaatggaaga gaccacatca gaggcagaca aaaacctttc caagcaagca 960  
 45 tgggacacca agaagacggg gtccaggccc aagtccctgt aggtccccgg aatcaacatc 1020  
 46 ttcccgctctg ccgaccagga aaacactaca gccctgatcc ccgccaccca caacacaggg 1080  
 47 gggtccttgc ccgacctgac caacatccac ttcccctccc cgctcccgac cccgctggac 1140  
 48 cccgaggagc ccaccttccc tgcactgagc agctccagca gcaccggcaa cctcgcgggc 1200  
 49 aacctgacgc acctgggcat cgggtggcgcc ggccagggaa tgagcacacc tggctcctct 1260  
 50 ccacagcacc gccagctgg cgtcagcccc ctgtccctga gcacagaggc aaggcgtcag 1320  
 51 caggcatcgc ccacctgtc cccgctgtca cccatcactc aggtctgtag catggacgcc 1380  
 52 ctgtctcttg agcagcagct gccctacgcc ttcttcaccc aggcgggctc ccagcagcca 1440

Cpg-6)

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53 ccgcccgcagc cccagccccc gccgcctcct ccacccgcgt cccagcagcc accacccccg 1500
54 ccacccccac aggcgcgcgt ccgcctgccc cctggtggcc ccctggtgcc cagcgccagc 1560
55 ctgactcgtg ggccacagcc gcccccgctt gcagtcacgg taccgtcctc tctccccag 1620
56 tccccccag agaaccctgg ccagccatcg atggggatcg acatcgccctc ggcgccggct 1680
57 ctgcagcagt accgcaactag cgccggctcc cgggccaacc agtctccac ctcgccagtc 1740
58 tccaatcaag gcttctcccc agggagctcc ccgcaacaca cttccaccct gggcagcgtg 1800
59 tttggggacg cgtactatga gcagcagatg ggggccaggc aggccaatgc tctgtccac 1860
60 cagctggagc agttcaacat gatggagaac gccatcagct ccagcagcct gtacagcccg 1920
61 ggctccacac tcaactactc gcaggcggcc atgatgggccc tcacgggcag ccacgggagc 1980
62 ctgccggact cgcagcaact gggatacgcc agccacagtg gcacccccaa catcatcctc 2040
63 acagtgcagc gagagtcccc cccagcctc tctaaagaac tgaccagctc tctggccggg 2100
64 gtggcgagc tcagcttcga ctccgacagc cagtttcccc tggacgaact caagatcgac 2160
65 cccctgaccc tcgacggact gcacatgctc aacgaccccg acatggttct ggccgaccca 2220
66 gccaccgagg acaccttcgg gatggaccgc ctgtgagcgg gcacgcgggc accctgccgc 2280
67 tcagccgtcc cgacggcgcc tccccagccc ggggacggcc gtgctccgtc cctcgccaac 2340
68 ggccgagctt gtgattctga gcttgcaatg ccgccaagcg ccccccgcca gcccgcctcc 2400
69 ggttgctccac ctcccgcgaa gcccaatcgc gaggccgcga gccgggcccgt ccacccacc 2460
70 gcccgccagc ggctgggctg ggatcggagg ccgtgagcct cccgcccctg cagaccctcc 2520
71 ctgcactggc tccctcgccc ccagccccgg ggcctgagcc gtcccctgta agatgcggga 2580
72 agtgctcagc cccggcgtgg cgggcaggct caggggaggg gcgcgcagtg tccgccaggg 2640
73 ctgtggggccg tggcgcatth tccgactggt tgtccagctc tcaactgcctt ccttggttcc 2700
74 cggcccccca gcccatccgc catccccagc ccgtggtcag gtagagagtg agccccacgc 2760
75 cgccccaggg agggagcgcc agagcgcggg gcagacgcaa agtgaaataa acactattht 2820
76 gacggcaaaa aaaaaaaaaa agggcgggccg ctctagagta tccctcgagg ggcccaag 2878
78 <210> SEQ ID NO: 2
79 <211> LENGTH: 650
80 <212> TYPE: PRT
81 <213> ORGANISM: human
83 <400> SEQUENCE: 2
84 Met Ala Thr Ser Asn Asn Pro Arg Lys Phe Ser Glu Lys Ile Ala Leu
85 1 5 10 15
86 His Asn Gln Lys Gln Ala Glu Glu Thr Ala Ala Phe Glu Glu Val Met
87 20 25 30
88 Lys Asp Leu Ser Leu Thr Arg Ala Ala Arg Leu Gln Leu Gln Lys Ser
89 35 40 45
90 Gln Tyr Leu Gln Leu Gly Pro Ser Arg Gly Gln Tyr Tyr Gly Gly Ser
91 50 55 60
92 Leu Pro Asn Val Asn Gln Ile Gly Ser Gly Thr Met Asp Leu Pro Phe
93 65 70 75 80
94 Gln Pro Ser Gly Phe Leu Gly Glu Ala Leu Ala Ala Ala Pro Val Ser
95 85 90 95
96 Leu Thr Pro Phe Gln Ser Ser Gly Leu Asp Thr Ser Arg Thr Thr Arg
97 100 105 110
98 His His Gly Leu Val Asp Arg Val Tyr Arg Glu Arg Gly Arg Leu Gly
99 115 120 125
100 Ser Pro His Arg Arg Pro Leu Ser Val Asp Lys His Gly Arg Gln Ala
101 130 135 140
102 Asp Ser Cys Pro Tyr Gly Thr Met Tyr Leu Ser Pro Pro Ala Asp Thr
103 145 150 155 160

```

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```

104 Ser Trp Arg Arg Thr Asn Ser Asp Ser Ala Leu His Gln Ser Thr Met
105           165           170           175
106 Thr Pro Thr Gln Pro Glu Ser Phe Ser Ser Gly Ser Gln Asp Val His
107           180           185           190
108 Gln Lys Arg Val Leu Leu Leu Thr Val Pro Gly Met Glu Glu Thr Thr
109           195           200           205
110 Ser Glu Ala Asp Lys Asn Leu Ser Lys Gln Ala Trp Asp Thr Lys Lys
111           210           215           220
112 Thr Gly Ser Arg Pro Lys Ser Cys Glu Val Pro Gly Ile Asn Ile Phe
113 225           230           235           240
114 Pro Ser Ala Asp Gln Glu Asn Thr Thr Ala Leu Ile Pro Ala Thr His
115           245           250           255
116 Asn Thr Gly Gly Ser Leu Pro Asp Leu Thr Asn Ile His Phe Pro Ser
117           260           265           270
118 Pro Leu Pro Thr Pro Leu Asp Pro Glu Glu Pro Thr Phe Pro Ala Leu
119           275           280           285
120 Ser Ser Ser Ser Ser Thr Gly Asn Leu Ala Ala Asn Leu Thr His Leu
121           290           295           300
122 Gly Ile Gly Gly Ala Gly Gln Gly Met Ser Thr Pro Gly Ser Ser Pro
123 305           310           315           320
124 Gln His Arg Pro Ala Gly Val Ser Pro Leu Ser Leu Ser Thr Glu Ala
125           325           330           335
126 Arg Arg Gln Gln Ala Ser Pro Thr Leu Ser Pro Leu Ser Pro Ile Thr
127           340           345           350
128 Gln Ala Val Ala Met Asp Ala Leu Ser Leu Glu Gln Gln Leu Pro Tyr
129           355           360           365
130 Ala Phe Phe Thr Gln Ala Gly Ser Gln Gln Pro Pro Pro Gln Pro Gln
131           370           375           380
132 Pro Pro Pro Pro Pro Pro Pro Ala Ser Gln Gln Pro Pro Pro Pro Pro
133 385           390           395           400
134 Pro Pro Gln Ala Pro Val Arg Leu Pro Pro Gly Gly Pro Leu Leu Pro
135           405           410           415
136 Ser Ala Ser Leu Thr Arg Gly Pro Gln Pro Pro Pro Leu Ala Val Thr
137           420           425           430
138 Val Pro Ser Ser Leu Pro Gln Ser Pro Pro Glu Asn Pro Gly Gln Pro
139           435           440           445
140 Ser Met Gly Ile Asp Ile Ala Ser Ala Pro Ala Leu Gln Gln Tyr Arg
141           450           455           460
142 Thr Ser Ala Gly Ser Pro Ala Asn Gln Ser Pro Thr Ser Pro Val Ser
143 465           470           475           480
144 Asn Gln Gly Phe Ser Pro Gly Ser Ser Pro Gln His Thr Ser Thr Leu
145           485           490           495
146 Gly Ser Val Phe Gly Asp Ala Tyr Tyr Glu Gln Gln Met Ala Ala Arg
147           500           505           510
148 Gln Ala Asn Ala Leu Ser His Gln Leu Glu Gln Phe Asn Met Met Glu
149           515           520           525
150 Asn Ala Ile Ser Ser Ser Ser Leu Tyr Ser Pro Gly Ser Thr Leu Asn
151           530           535           540
152 Tyr Ser Gln Ala Ala Met Met Gly Leu Thr Gly Ser His Gly Ser Leu

```

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Input Set : A:\SEQ 32999A.txt

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```

153 545          550          555          560
154 Pro Asp Ser Gln Gln Leu Gly Tyr Ala Ser His Ser Gly Ile Pro Asn
155          565          570          575
156 Ile Ile Leu Thr Val Thr Gly Glu Ser Pro Pro Ser Leu Ser Lys Glu
157          580          585          590
158 Leu Thr Ser Ser Leu Ala Gly Val Gly Asp Val Ser Phe Asp Ser Asp
159          595          600          605
160 Ser Gln Phe Pro Leu Asp Glu Leu Lys Ile Asp Pro Leu Thr Leu Asp
161          610          615          620
162 Gly Leu His Met Leu Asn Asp Pro Asp Met Val Leu Ala Asp Pro Ala
163 625          630          635          640
164 Thr Glu Asp Thr Phe Arg Met Asp Arg Leu
165          645          650
168 <210> SEQ ID NO: 3
169 <211> LENGTH: 32
170 <212> TYPE: DNA
171 <213> ORGANISM: Artificial Sequence
173 <220> FEATURE:
174 <223> OTHER INFORMATION: primer
176 <400> SEQUENCE: 3
177 gccccagctt tgtgctctgc tgtctctgaa ag                      32
179 <210> SEQ ID NO: 4
180 <211> LENGTH: 23
181 <212> TYPE: DNA
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: primer
187 <400> SEQUENCE: 4
188 gccctgaggg gatgggccat cag                      23
190 <210> SEQ ID NO: 5
191 <211> LENGTH: 36
192 <212> TYPE: DNA
193 <213> ORGANISM: Artificial Sequence
195 <220> FEATURE:
196 <223> OTHER INFORMATION: primer
198 <400> SEQUENCE: 5
199 cgcggtatccg aagtgtgatg actcaggttt gccctg          36
201 <210> SEQ ID NO: 6
202 <211> LENGTH: 36
203 <212> TYPE: DNA
204 <213> ORGANISM: Artificial Sequence
206 <220> FEATURE:
207 <223> OTHER INFORMATION: primer
209 <400> SEQUENCE: 6
210 cgcggtatccg aagtgtgata tctcaggttt gccctg          36
212 <210> SEQ ID NO: 7
213 <211> LENGTH: 54
214 <212> TYPE: DNA
215 <213> ORGANISM: Artificial Sequence

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Input Set : A:\SEQ 32999A.txt

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```

217 <220> FEATURE:
218 <223> OTHER INFORMATION: primer
220 <400> SEQUENCE: 7
221 gccctgaggg gatgggccat cagttgcaaa tcgttaactt tcctctgaca taat      54
223 <210> SEQ ID NO: 8
224 <211> LENGTH: 39
225 <212> TYPE: DNA
226 <213> ORGANISM: Artificial Sequence
228 <220> FEATURE:
229 <223> OTHER INFORMATION: primer
231 <400> SEQUENCE: 8
232 gccctgaggg gatgggccat cagctacgag tcgtggaat      39
234 <210> SEQ ID NO: 9
235 <211> LENGTH: 47
236 <212> TYPE: DNA
237 <213> ORGANISM: Artificial Sequence
239 <220> FEATURE:
240 <223> OTHER INFORMATION: primer
242 <400> SEQUENCE: 9
243 cgcggtatccg aagtgtgatg actcaggttt gccctgaggg gatgggc      47
245 <210> SEQ ID NO: 10
246 <211> LENGTH: 43
247 <212> TYPE: DNA
248 <213> ORGANISM: Artificial Sequence
250 <220> FEATURE:
251 <223> OTHER INFORMATION: primer
253 <400> SEQUENCE: 10
254 cagttgcaaa tcgtggaatt tcctctcgat caatgaaaag atg      43
256 <210> SEQ ID NO: 11
257 <211> LENGTH: 39
258 <212> TYPE: DNA
259 <213> ORGANISM: Artificial Sequence
261 <220> FEATURE:
262 <223> OTHER INFORMATION: primer
264 <400> SEQUENCE: 11
265 gccctgaggg gatgggccat cagttgcaaa tcgtggaat      39
267 <210> SEQ ID NO: 12
268 <211> LENGTH: 19
269 <212> TYPE: DNA
270 <213> ORGANISM: Artificial Sequence
272 <220> FEATURE:
273 <223> OTHER INFORMATION: primer
275 <400> SEQUENCE: 12
276 cgcttggtac cgagctctg      19
278 <210> SEQ ID NO: 13
279 <211> LENGTH: 19
280 <212> TYPE: DNA
281 <213> ORGANISM: Artificial Sequence
283 <220> FEATURE:

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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/549,977

DATE: 10/03/2005  
TIME: 14:31:48

Input Set : A:\SEQ 32999A.txt  
Output Set: N:\CRF4\10032005\J549977.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:15; N Pos. 2,13,2431,2453,2465,2468,2469,2479,2488,2489,2492,2505,2512

Seq#:15; N Pos. 2514,2519,2520

Seq#:24; N Pos. 1,13

Seq#:28; N Pos. 1528

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/549,977

DATE: 10/03/2005

TIME: 14:31:48

Input Set : A:\SEQ 32999A.txt

Output Set: N:\CRF4\10032005\J549977.raw

L:16 M:270 C: Current Application Number differs, Replaced Current Application No  
 L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
 L:315 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:15  
 L:316 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0  
 M:341 Repeated in SeqNo=15  
 L:543 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0  
 L:869 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:1500